

REMARKS/ARGUMENTS

Reconsideration of this application in light of the above amendments and following comments is courteously solicited.

Initially, Applicants have cancelled non-elected apparatus claims 6-8 from the instant application. Applicants reserve the right to file a divisional application based on apparatus claims 6-8.

Claim 9 has been amended so as to delete the phrase "upper" so as to overcome the examiner's rejection of same under 35 U.S.C. 112, second paragraph.

With regard to the examiner's comment that the limitation "the heat removing sodium loop" in line 4 of claim 1 does not find antecedent basis, Applicants direct the examiner's attention to lines 11 and 12 of claim 1 which recites a heat removing sodium loop". Applicants assert that there is proper antecedent basis for the limitation in claim 9 in the examiner's rejection under 35 U.S.C. 112, second paragraph regarding same should be withdrawn.

Applicant by the instant amendment has rewritten previously submitted dependent claim 5 into independent form by incorporating into amended independent claim 1 the subject matter of dependent claim 5 and interceding claim 3. It is respectfully submitted that the amendment made to independent claim 1 is proper at this stage in the prosecution, even after final rejection, as the amendment only rewrites dependent claim 5 in independent form, and does not require further search and consideration. It is submitted that independent claim 1 is patentable over the cited art for the reasons set forth hereinbelow.

According to the present invention, the sodium-sodium heat exchanger is disposed at a position higher than a liquid level of the sodium, in the cold pool; under normal steady-state

conditions, in order not to contact with the sodium in the cold pool and the sodium in the heat exchanger is not solidified only with radiant heat transferred from the hot pool by adjusting a surface emissivity of the sodium-sodium heat exchanger. These limitations from previously submitted claim 5 have now been incorporated into independent claim 1.

The examiner previously rejected claim 5 believing the limitation of claim 5 to be inherent in Hundal et al. and a matter of optimization within prior art conditions or through routine experimentation. Applicants traverse this rejection. Hundal et al. describes the corresponding technical features as follows (lines 51-63 of column 8)

"while it would be possible to design the redan 76 so that the level 112 of the liquid sodium within the annular space 93 made no contact whatever with the lower pipes 74 of the heat exchanger 72, some minimal contact is preferred in order to keep the liquid metal within the pipes 74 liquid at all times so that there is always at last some circulation of coolant moving through the heat exchanger 72. Such minimal contact is not enough to significantly affect the efficiency of the reactor facility 1 as a whole, but yet will insure that the system 70 will respond rapidly to a shut-down condition, since the coolant will never have a chance to solidify in the pipes 74 (Emphasis added)"

It is clear from the above description, that the invention disclosed in Hundal et al. needs some minimal contact in order to keep definitely the liquid metal within the pipes liquid at all times. Consequently Hundal et al. only teaches the possibility of no contact between the sodium and the heat exchanger and does not teach the technical feature of adjusting the surface emissivity of the sodium-sodium heat exchanger. Therefore, Hundal et al. taken alone or in combination with Jogond fail to teach both the limitations of claim 5 now incorporated in independent claim 1 and the aforesaid limitation is not inherent

in or a manner of routine experimentation. There is nothing at all to suggest the adjusting of the surface emissivity of the sodium-sodium heat exchanger as claimed. Accordingly, it is respectfully submitted that claim 1 as amended defines over the prior art of record and is now in condition for allowance.

An earnest and thorough attempt has been made by the undersigned to resolve the outstanding issues in this case and place same in condition for allowance. If the Examiner has any questions or feels that a telephone or personal interview would be helpful in resolving any outstanding issues which remain in this application after consideration of this amendment, the is courteously invited to telephone the undersigned and the same would be gratefully appreciated.

It is submitted that the claims as amended herein patentably define over the art relied on by the Examiner and early allowance of same is courteously solicited.

If any fees are required in connection with this case, it is respectfully requested that they be charged to Deposit Account No. 02-0184.

Respectfully submitted,
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By

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Date: August 14, 2006

I, Rachel Piscitelli, hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313" on August 14, 2006.

